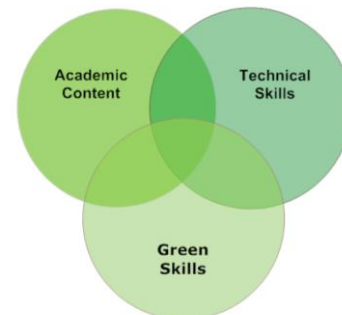


NJ's Green Program of Study for Sustainable Design, Construction and Energy

Overview

New Jersey's Green Program of Study for Sustainable Design, Construction and Energy is spearheading the development of career and technical education (CTE) programs that link high school with advanced training and collegiate study to prepare students for a broad range of careers in the design, construction, and energy industries. The project is supporting the collaborative development of curricula and teacher professional development to provide:

- integrated academic content and CTE-focused project based learning, to prepare students for college and careers
- a focus on science, sustainability, energy efficiency, and renewable energy
- career awareness and fundamental skills related to the design, construction, and energy industries, aligned to CTE standards, and
- emphasis on technology, including computer assisted design, energy modeling and exposure to classroom-based online learning



Building on the foundation of academic preparation, sustainability knowledge, and workplace skills, the Green Program of Study is developing a sequence of courses for each of three industry pathways:

- *Sustainable Design/Architecture*
- *Green Construction*
- *Sustainable Energy*

The model will enable vocational-technical and local high schools to collaborate with participating colleges in offering a non-duplicated sequence of courses focused on high-demand careers in sustainable design, “green” construction, or sustainable energy. The long-term goals of the Green Program of Study include:

- Collaborative development of programs of study that can be implemented by multiple school districts, leveraging resources and partner expertise
- Increased capacity of schools and teachers to deliver CTE programs that incorporate rigorous academic content and advanced technical skills and knowledge in a project-based format
- Expanded opportunities for CTE students to pursue a sequence of courses that link to collegiate or advanced technical training opportunities
- A pipeline of future workers and innovators with a commitment to sustainability who will lead efforts to reduce energy consumption through sustainable approaches to design, construction, and energy management

Project and Partners

The project is a partnership of the NJ Department of Education, Essex County Vocational-Technical Schools and the NJ Council of County Vocational-Technical Schools, several two- and four-year colleges, and employer representatives including PSEG, the Center for Energy Workforce Development, NJ Building Laborers Union, and the US Green Building Council – NJ Chapter. New Jersey was one of five states selected to participate in the National Technical Assistance Academy for development of green-focused programs of study, which provided the initial impetus for the project. NJDOE is providing continued funding to support the work launched through the National Technical Assistance Academy.

Progress to Date

- Six pilot districts selected by NJ Department of Education to test the implementation of the program of study pathways.¹ Additional school districts joined the project as curriculum development partners and unofficial pilot sites.
- Week-long professional development experiences provided to participating teachers Summer 2011, Fall 2011, and Summer 2012, including energy efficiency and LEED Green Association training.
- On-site technical assistance provided to participating schools in 2012-13.
- Professional learning community supported through social media tools and ongoing meetings.
- Colleges and universities engaged in development of CTE courses, with the goal of establishing dual credit opportunities.²
- Grade 9 Introductory Science and Sustainability curriculum developed and piloted during 2011-12 and 2012-13 school years.
- Grade 10-11 curricula for Sustainable Design and Sustainable Energy developed; Grade 12 curricula under development.
- Grade 10 curricula for Green Construction identified and customized for NJ; Grade 11-12 curriculum under development.
- Capstone college-level “Introduction to Sustainability” course under development for 12th grade students.

Potential Industry Certifications

- LEED Green Associate, in collaboration with US Green Building Council-NJ
- Energy Industry Fundamentals, in collaboration with Center for Energy Workforce Development
- Autodesk Certified User (Revit/CAD)

Careers in Sustainable Design, Construction and Energy

Design

Architect
Engineer
Interior/exterior designer
Computer assisted drafting (CAD)
Land-use planner
Industrial/mechanical design

Energy Efficiency/Utilities

Energy auditor/rater
Energy manager
Engineers
Smart Grid technicians
Renewable energy technicians
Installation, repair & maintenance technicians
IT/Computer specialists

Construction

Residential/commercial contractor
Energy efficiency retrofitter
Construction manager
Project manager
Craft specialist (i.e. carpenter, electrician, plumber, HVAC technician)
Code official/inspector
Safety expert

¹ Bergen Tech, Camden Tech, Cape May Tech, Hunterdon Polytech, Passaic County Technical Institute and Willingboro High School

² Active partners include Burlington and Mercer county colleges, NJIT, and Richard Stockton College of NJ.